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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,578	04/09/2004	Todd R. Martin	DC-06097	1886

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HAMILTON & TERRILE, LLP  
P.O. BOX 203518  
AUSTIN, TX 78720

EXAMINER
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RAHMAN, FAHMIDA

ART UNIT	PAPER NUMBER
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2116

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/11/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/821,578

Applicant(s)

MARTIN, TODD R.

Examiner

Fahmida Rahman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-20 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/20/2004</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Claims 1-20 are pending.

#### **Information Disclosure Statement**

The information disclosure statement (IDS) submitted on 8/20/2004 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is considered by the examiner.

#### **Claim Rejections - 35 USC § 112**

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 9-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 recites "a program module" in line 1 and line 4. It is not clear whether they are same or different from each other. It is necessary to establish a relationship between the two recitations. For the rest of the action, it is assumed that same relationship was intended.

In addition, claim 9 recites "a first storage device" in lines 4-5. It is not clear whether it is same or different from "a first storage device" recited in line 1. It is necessary to

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establish a relationship between the two recitations. For the rest of the action, it is assumed that same relationship was intended.

Claims 10-15 depend on claim 9. Thus, they carry the same ambiguity of claim 9.

### **Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 4, 9, 12, 15, 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Kim et al (US Patent 7073054).

For claim 1, Kim et al teach the following limitations:

A computer system (Fig 1 and Fig 2) for performing expedited startup operations (lines 55-56 of column 1), comprising: a processor (10); a system startup memory (30) coupled to the processor (lines 17-20 of column 2); a basic input/output system (BIOS) memory (20) coupled to the processor (Fig 1), the BIOS memory comprising instructions for initiating startup operations (lines 25-27 of column 1); and a hard disk drive storage device (40), comprising a storage media comprising at least one drive

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platter (42) for storing a program module ("booting program of an OS" mentioned in line 18 of column 3) that is loaded in the system startup memory during startup operations (lines 15-20 of column 1; lines 56-64 of column 2), a non-volatile memory (45) for storing a copy of the program module stored on the storage media (lines 20-26 of column 4), and a microcontroller (44) for controlling access to the storage media and the non-volatile memory (lines 30-63 of column 3), said microcontroller configured to retrieve the program module from the non-volatile memory in response to a read request from the processor if the storage media is not operational when the read request is received by the hard disk drive storage device (lines 46-63 of column 3).

For claim 4, lines 46-63 of column 3 mention that the program module is the booting program that is loaded into main memory (lines 29-37 of column 4). As booting implies loading of OS, the OS associated with booting program is loaded for the computer system.

For claim 9, Kim et al teach the following limitations:

A method for retrieving a program module ("booting program of an OS" mentioned in line 18 of column 3) from a first storage device (40) during startup operations (line 61 of column 1 through line 2 of column 2), comprising: executing BIOS instructions for initiating startup operations (lines 25-27 of column 1); initiating operating system load operations (lines 15-20 of column 1; lines 56-64 of column 2) by requesting a program module ("booting program of an OS" mentioned in line 18 of column 3) for a first storage

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device comprised of a first storage media (42) and a non-volatile storage media (45); and retrieving said program module from the non-volatile storage media if the first storage media is not operational to provide said program module (lines 46-63 of column 3).

For claim 12, lines 46-63 of column 3 mention that the program module is the booting program that is loaded into main memory (lines 29-37 of column 4). As booting implies loading of OS, the OS associated with booting program is loaded for the computer system.

For claim 15, the program module is executed to load OS (line 3 of column 4).

For claim 16, Kim et al teach the following limitations:

In an information handling system (Fig 1), a disk drive storage device (40), comprising: at least one drive platter (42) for storing a program module ("booting program of an OS" mentioned in line 18 of column 3), a non-volatile memory (45) for storing a copy of the program module (lines 20-26 of column 4), and a microcontroller (44) for controlling access to the drive platter and the non-volatile memory (lines 30-63 of column 3), said microcontroller configured to retrieve the program module from the non-volatile memory in response to a read request from a processor if the drive platter is not operational when the read request is received by the disk drive storage device (lines 46-63 of column 3).

**Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 10, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al (US Patent 7073054), in view of Sukegawa (US Patent 5860083).

For claims 2, 10 and 17, the non-volatile memory of Kim et al is a flash memory. Kim et al does not mention that non-volatile memory comprises a cache memory. Sukegawa teaches that the flash memory (1) comprises cache (10C) to perform high speed operation. One ordinary skill in the art would be motivated to include cache in the flash of Kim et al as cache is well known for its high speed performance.

5. Claims 2, 3, 7, 10, 11, 14, 17, 18, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al (US Patent 7073054), in view of Coulson (US Patent Application Publication 2004/0162950).

For claims 2, 3, 7, 10, 11, 14, 17, 18 and 20, the non-volatile memory of Kim et al is a flash memory. Kim et al does not mention that the non-volatile memory comprises a cache memory. Coulson teaches a non-volatile memory (145) comprising cache

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memory (145) that further comprises battery backed CMOS memory ([0025]). Coulson further teaches a microcontroller memory (150) for storing a module that maintains coherency between the storage media and the non-volatile cache ([0040]).

It would have been obvious for one ordinary skill in the art at the time the invention was made to combine the teachings of Kim et al and Coulson. One ordinary skill in the art would be motivated to use non-volatile cahce for its high speed operation. One ordinary skill in the art would be motivated to use cache coherency controller to maintaining cache coherency between cache and storage media.

6. Claims 5, 6, 13, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al (US Patent 7073054).

For claim 5, 13 and 19, Kim et al do not teach that the initial program load module comprises an MBR, boot loader and kernel. Examiner takes an official notice that these components of IPL are well known in the art. One ordinary skill would be motivated to have the IPL with MBR, boot loader and kernel as that would provide the necessary functionality for the system.

For claim 6, Kim et al do not teach that the hard drive comprising RAID array. Examiner takes an official notice that RAID array is well known in the art. One ordinary skill would be motivated to have RAID array for its redundancy.



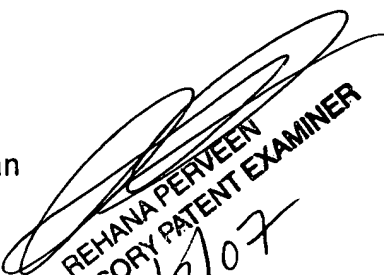
### **Allowable Subject Matter**

7. Claim 8 would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fahmida Rahman whose telephone number is 571-272-8159. The examiner can normally be reached on Monday through Friday 8:30 -6:30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rehana Perveen can be reached on 571-272-3676. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Fahmida Rahman  
Examiner  
Art Unit 2116

  
REHANA PERVEEN  
SUPERVISORY PATENT EXAMINER  
1/8/07